IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: Henrik PEDERSEN	)	Art Unit:
	)	Examiner:
Serial No.: 10/522,171	)	Washington, D.C.
IA Filed: July 11, 2003	)	November 4, 2005
For: GENE SHUFFLING BY TEMPLATE SWITCHING	)	Docket No.: PEDERSEN11

INFORMATION DISCLOSURE STATEMENT [IDS]

Honorable Commissioner of Patents
and Trademarks
Washington, D.C. 20231

S i r :

This Information Disclosure Statement is submitted in accordance with 37 C.F.R. 1.97, 1.98, and it is requested that the information set forth in this statement and in the listed documents be considered during the pendency of the above-identified application, and any other application relying on the filing date of the above-identified application or cross-referencing it as a related application.

1. This IDS should be considered, in accordance with 37 C.F.R. 1.97, as it is filed:

[ ] A. within three months of the filing date of the above-identified national application or within three months of the entry into the national stage of the above-identified international application. See 37 CFR 1.97(b).

[X] B. before the mailing date of a first office action on the merits. See 37 CFR 1.97(b).

[ ] C. after (A) and (B) above, but before final rejection or allowance, and Applicants have made the necessary certification (box "i" below) or paid the necessary fee (box "ii"

below). See 37 CFR 1.97(c).

[ ] i. Counsel certifies that, upon information and belief, each item of information listed herein was either (a) cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS or (b) was not cited in a communication from a foreign patent office in a counterpart foreign application and was not known to any individual designated in 1.56(c) more than three months prior to the filing of this IDS.

[ ] ii. A check for the fee set forth in 1.17(p), presently believed to be $180, is enclosed (check no. _____).

[ ] D. after (A), (B) and (C) above, but before payment of the issue fee. Applicant petitions under 37 C.F.R. 1.97(d) for consideration of this IDS. A check for the fee set forth in 1.17(i)(1), presently believed to be $130 is enclosed (check no. _____). Counsel certifies that, upon information and belief, each item of information listed herein was either (i) cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this IDS or (ii) was not cited in a communication from a foreign patent office in a counterpart foreign application and was not known to any individual designated in 1.56(c) more than three months prior to the filing of this IDS.

[ ] E. As a submission in accordance with the transitional procedure for limited examination after final rejection pursuant to 37 CFR §1.129(a). Pursuant to MPEP §706.07(g), page 700-46, col. 2 (February 2000), this IDS is treated as if filed with a period set forth in 37 CFR §1.97(b)

and considered without the petition and petition fee required by 1.97(d).

2. In accordance with 37 C.F.R. 1.98, this IDS includes a list (e.g., form PTO-1449) of all patents, publications, or other information submitted for consideration by the office, either incorporated into this IDS or as an attachment hereto. A copy of each document is attached, except as explained below.

[X] While an IDS filed under §1.97 must contain a "list of all patents, publications or other information submitted for consideration by the Office", see §1.98(a) (1), the only requirement for the list is that it provide the information set forth in §1.98(b). There is no requirement that a form PTO-1449 be used (MPEP §609 merely says that use of this form is "encouraged"). Counsel has used a list provided to him by Applicants, and not transferred the information to a PTO-1449, to avoid the risk of any inadvertent error in transferring the information.

[ ] A. Documents _____ are deemed substantially cumulative to documents _____, and, in accordance with 1.98(c), only a copy of each of the latter documents is enclosed.

[ ] B. Certain documents were previously cited by or submitted to the Office in the following prior application(s), which are relied upon under 35 U.S.C. 120:

[insert serial number/filing date]

Applicants identify these documents by attaching hereto copies of the form PTO-892s and PTO-1449s from the files of the prior applications or a fresh PTO-1449 listing these documents, and request that they be considered and made of record in accordance

with 1.98(d). Per 37 CFR 1.98(d), copies of these documents need not be filed in this application. If copies of any of these documents cannot be found in the files of the prior applications, the Examiner is requested to so notify counsel before taking action in this case, so replacement copies can be submitted. While an IDS filed under §1.97 must contain a "list of all patents, publications or other information submitted for consideration by the Office", see §1.98(a) (1), the only requirement for the list is that it provide the information set forth in §1.98(b). There is no requirement that a form PTO-1449 be used (MPEP §609 merely says that use of this form is "encouraged") and no prohibition on submitting a copy of a form PTO-1449 or form PTO-892 from a prior case. Indeed, the re-use of such forms is desirable as it avoids error in transferring the information, and evidences that the reference was considered in a prior application. A previously accepted PTO-1449, or an examiner-prepared PTO-892, necessarily complies with §1.98(b).

[ ] 3. Documents _____ are not in the English language. In accordance with 1.98(c), Applicants state:

[ ] documents _____ already contain an English language abstract, summary or claim set.

[ ] a publicly available abstract is attached to each of documents _____, and the source of each abstract is indicated thereon.

[ ] documents _____ are patents or published patent applications for which counterpart English language patents or patent applications exist, and are enclosed, as follows:

Foreign Lang. Doc.#	English Lang. Doc.#
[insert]	[insert]

[ ] applicants have prepared an English translation of

at least the pertinent portions of documents _____, and copies are attached.

[ ] A concise explanation of the relevance of documents _____ is found in the attached search report from the _____ Patent Office (see reply to Comment 68 in the preamble to the final rules; 1135 OG 13 at 20).

[ ] A concise explanation of the relevance of documents _____ is set forth as follows:

[Insert concise explanation of relevance]

4. No explanation of relevance is necessary for documents in the English language (see reply to Comments 67 and 68 in the preamble to the final rules; 1135 OG 13 at 20).

5. Other information being provided for the examiner's consideration follows:

[insert other information]

6. In accordance with 37 C.F.R. 1.97(g) and (h), the filing of this IDS should not be construed as a representation that a search has been made or that information cited is, or is considered to be, material to patentability as defined in §1.56 (b), or that any cited document listed or attached is (or constitutes) prior art. Unless otherwise indicated, the date of publication indicated for an item is taken from the face of the item and Applicant reserves the right to prove that the date of publication is in fact different.

7. The Commissioner is hereby authorized and requested to charge any additional fees which may be required in connection with this application or credit any overpayment to Deposit Account No. 02-4035.

Respectfully submitted,

BROWDY AND NEIMARK, P.L.L.C.
Attorneys for Applicant

By: 
Iver P. Cooper
Reg. No. 28,005

624 Ninth Street, N.W.
Washington, D.C. 20001
Telephone: (202)628-5197
Facsimile: (202)737-3528
IPC:ses
G:\ipc\g-i\hoib\Pedersen11\IDSIPC.doc

FORM PTO-1449 U.S. DEPARTMENT OF COMMERCE PATENT AND TRADEMARK OFFICE	ATTY DOCKET NO: Our ref: PEDERSEN11	SERIAL NO: 10/522,171
LIST OF DOCUMENTS CITED BY APPLICANT (Use several sheets if necessary)	APPLICANT: Pedersen et al.	
	FILING DATE: 11 July 2003	GROUP:

U.S. PATENT DOCUMENTS (include at least patentee, patent number and issue date)

EXAMINER INITIAL		DOCUMENT NUMBER							DATE	PATENTEE	CLASS	SUB-CLASS	FILING DATE IF APPROP.
	AA	6	4	2	9	3	0	0	Aug 6, 2002	Kurz, M et al.			
	AB	6	2	0	7	4	4	6	Mar 27, 2001	Szostak, J et al.			
	AC	6	1	4	3	5	0	3	Nov 7, 2000	Baskerville, DS et al.			
	AD	6	6	2	0	5	8	7	Sept 16, 2002	Taussig, MJ et al.			May 28, 1998
	AE	20	03	00	04	1	2	2	Jan 2, 2003	Beigelman et al.			April 4, 2001

FOREIGN PATENT DOCUMENTS (include at least document number, publication date and country)

		DOCUMENT NUMBER							DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION YES/NO
	AF	9	3	0	3	1	7	2	18 Feb 1991	PCT			
	AG	9	8	3	1	7	0	0	23 July 1998	PCT			
	AH	0	0	3	2	8	2	3	8 June 2000	PCT			
	AI	0	0	4	7	7	7	5	17 Aug 2000	PCT			
	AJ	9	0	0	5	7	8	5	31 May 1990	PCT			
	AK	9	1	0	5	0	5	8	18 Apr 1991	PCT			
	AL	1	5	3	3	3	8	5	25 May 2005	EP			
	AM	20	05	02	6	3	8	7	24 March 2005	PCT			

OTHER DOCUMENTS (include author, title, name of publication, volume, pages & date of publication)

	AN	Nemoto, N et al. "In vitro virus: bonding of mRNA bearing puromycin at the 3'-terminal end to the C-terminal end of its encoded protein on the ribosome in vitro". FEBS Lett. 1997 Sep 8;414(2):405-8. (our ref: A2)
	AO	Roberts, RW et al. "RNA-peptide fusions for the in vitro selection of peptides and proteins". Proc Natl Acad Sci U S A. 1997 Nov 11;94(23):12297-302. (our ref: A3)
	AP	Kurz, M et al. "**An efficient synthetic strategy for the preparation of nucleic acid-encoded peptide and protein libraries for in vitro evolution protocols**" Fourth International Electronic Conference on Synthetic Organic Chemistry (ECSOC-4), www.mdpi.org/ecsoc-4.htm, September 1-30, 2000
	AQ	Kurz, M et al. "Psoralen photo-crosslinked mRNA-puromycin conjugates: a novel template for the rapid and facile preparation of mRNA-protein fusions. Nucleic Acids Res. 2000 Sep 15;28(18):E83.
	AR	Keiler et al. "Role of a peptide tagging system in degradation of proteins synthesized from damaged messenger RNA". Science. 1996 Feb 16;271(5251):990-3.
	AS	Benner, SA. "Expanding the genetic lexicon: incorporating non-standard amino acids into proteins by ribosome-based synthesis". Trends Biotechnol. 1994 May;12(5):158-63
	AT	Mendel, D." Site-directed mutagenesis with an expanded genetic code". Annu. Rev. Biophys. Biomol. Struc. 1995. 24:463-93
	AU	Liu DR et al. "Engineering a tRNA and aminoacyl-tRNA synthetase for the site-specific incorporation of unnatural amino acids into proteins in vivo". Proc Natl Acad Sci U S A. 1997 Sep 16;94(19):10092-7.
	AV	Liu DR et al. "Progress toward the evolution of an organism with an expanded genetic code". Proc Natl Acad Sci USA. 1999 Apr 27;96(9):4780-5
	AW	Liu, R et al. "Optimized synthesis of RNA-protein fusions for in vitro protein selection". Methods Enzymol. 2000;318:268-93.
	AX	Wang, L et al. "A new functional suppressor tRNA/aminoacyl-tRNA synthetase pair for the in vivo incorporation of unnatural amino acids into proteins" J. Am. Chem. Soc 2000, 122, 5010-5011 Pub 5 April 2000
	AY	Ellman J.A., et al. " Biosynthetic method for introducing Unnatural Amino acids site specifically into proteins". Methods Enzymol. 202, 301-336 (1992)
	AZ	José Salas et al. "Biosynthetic Polydeoxynucleotides as Direct Templates for Polypeptide Synthesis". J. of Biological Chemistry, vol.243, No. 6, 1968, p. 1012-1015

EXAMINER	DATE CONSIDERED

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	IA FILING DATE: July 11, 2003	GROUP:

U.S. PATENT DOCUMENTS (include at least patentee, patent number and issue date)

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	PATENTEE	CLASS	SUB-CLASS	FILING DATE IF APPROP.
	BA	20050042669	Published 24 February 2005	Liu, David R			
	BB	20050025766	Published 3 February 2005	Liu, David R			

FOREIGN PATENT DOCUMENTS (include at least document number, publication date and country)

		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION YES/NO
	BC	2004099441	18 Nov 2004	PCT			
	BD	03082901	9 Oct 2003	PCT			
	BE	9105058	18 April 1991	PCT			
	BF	2005026387	24 March 2005	PCT			

OTHER DOCUMENTS (include author, title, name of publication, volume, pages & date of publication)

	BG	"The Nucleus", January 2004, Vol. LXXXII, No. 5, R. Grubina; "Summer Research Report: R. Grubina on DNA Templated Synthesis for Small Molecule Library", p10-14
	BH	Nazarenko et al., "A closed tube format for amplification and detection of DNA based on energy transfer", Nucleic Acids Research, 1997, Vol. 25, No. 12, p2516-2521
	BI	Chan et al., "Intra-tRNA distance measurements for nucleocapsid protein-dependent tRNA unwinding during priming of HIV reverse transcription", PNAS Vol. 96, p459-464, January 1999.
	BJ	DNA-templated synthesis as a basis for the evolution of synthetic molecules. Liu DR, Gartner ZJ, Kanan MW, Calderone CT ABSTRACTS OF PAPERS OF THE AMERICAN CHEMICAL SOCIETY 225: 612-ORGN , Part 2, MAR 2003
	BK	Rodriguez et al., "Template-directed extension of a guanosine 5'-phosphate covalently attached to an oligodeoxycytidylate template", J Mol Evol (1991) 33:477-482
	BL	Inoue et al, "Oligomerization of (Guanosine 5'-phosphor)-2-methylimidazolide on Poly(C), J. Mol. Biol. (1982), 162, 201-217
	BM	C. B. Chen et al., "Template-directed synthesis on Oligodeoxycytidylate and Polydeoxycytidylate templates" J. Mol. Biol. 1985, 181, 271
	BN	H. Rembold et al., "Single-strand regions of Poly(G) act as templates for oligo(C) synthesis" J. Mol. Evol. 1994, 38, 205.
	BO	T. Inoue et al., "A nonenzymatic RNA polymerase model", Science 1983, 219, p859-862
	BP	O. L. Acevedo et al., "Non-enzymatic transcription of an oligonucleotide 14 residues long", J. Mol. Biol. 1987, 197, p187-193
	BQ	C. Böhler et al.,"Template switching between PNA and RNA oligonucleotides", Nature 1995, 376, 578-581

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EXAMINER: Initial if reference considered. Draw line through citation if not in conformance and not considered. Include copy of this form With next communication to applicant.

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	IA FILING DATE: July 11, 2003	GROUP:

OTHER DOCUMENTS (include author, title, name of publication, volume, pages and date of publication)

	BR	Acevedo et al., "Template-directed oligonucleotide ligation on hydroxylapatite", Nature vol. 321, 19 June 1986, p790-792
	BS	Piccirilli, "RNA seeks its maker", Nature vol. 376, 17 August 1995, p548-
	BT	A. W. Schwartz et al., "Template-directed synthesis of novel, nucleic acid-like structures", Science 1985, 228, 585-7
	BU	Halpin et al.: DNA display III. Solid-phase organic synthesis on unprotected DNA. PLoS Biol. 2004 Jul;2(7):E175. Epub 2004 Jun 22.
	BV	Halpin et al.: DNA display II. Genetic manipulation of combinatorial chemistry libraries for small-molecule evolution. PLoS Biol. 2004 Jul;2(7):E174. Epub 2004 Jun 22.
	BW	Halpin et al.: DNA display I. Sequence-encoded routing of DNA populations. PLoS Biol. 2004 Jul;2(7):E173. Epub 2004 Jun 22
	BX	"Highly Sensitive In Vitro Selections for DNA-Linked Synthetic Small Molecules with Protein Binding Affinity and Specificity" Doyon, J. B.; Snyder, T. M.; Liu, D. R. J. Am. Chem. Soc. 125, 12372-12373 (2003).
	BY	"Translation of DNA into Synthetic N-Acyloxazolidines" Li, X.; Gartner, Z. J.; Tse, B. N.; Liu, D. R. J. Am. Chem. Soc. 126, 5090-5092 (2004).
	BZ	"DNA-Templated Organic Synthesis: Nature's Strategy for Controlling Chemical Reactivity Applied to Synthetic Molecules" Li, X.; Liu, D. R. Angew. Chem. Int. Ed. 43, 4848-4870 (2004).
	CA	"DNA-Templated Organic Synthesis and Selection of a Library of Macrocycles" Gartner, Z. J.; Tse, B. N.; Grubina, R.; Doyon, J. B.; Snyder, T. M.; Liu, D. R. Science 305, 1601-1605 (2004).
	CB	"Nucleic Acid-Templated Synthesis as a Model System for Ancient Translation" Calderone, C. T. and Liu, D. R. Curr. Opin. Chem. Biol. 8, 645-653 (2004).
	CC	"DNA-Templated Functional Group Transformations Enable Sequence-Programmed Synthesis Using Small-Molecule Reagents" Sakurai, K.; Snyder, T. M.; Liu, D. R. J. Am. Chem. Soc. 127, 1660-1661 (2005).
	CD	"Translating DNA into synthetic Molecules", David R. Liu, PLoS Biology, July 2004, Vol 2, Iss. 7, p905-6.
	CE	"The Development of Amplifiable and Evolvable Unnatural Molecules", David R. Liu, Harvard Univ. Cambridge MA Dept of Chemistry and Chemical Biology, Report dated 4 Aug 2003 No. A104614, approved for public release.
	CF	Website of Prof. David R. Liu, publicly available 11 March 2000
	CG	Website of Prof. David R. Liu, publicly available 15 Oct 2000
	CH	Website of Prof. David R. Liu, publicly available 1 March 2001
	CI	Website of Prof. David R. Liu, publicly available 19 April 2001
	CJ	Website of Prof. David R. Liu, publicly available 23 Sept 2001
	CK	Website of Prof. David R. Liu, publicly available 24 Sept. 2002
	CL	Website of Prof. David R. Liu, publicly available 20 Nov 2002
	CM	Website of Prof. David R. Liu, publicly available 15 Oct 2003

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